



Complete Summary

TITLE

Stroke: risk-adjusted rate of all cause in-hospital death occurring within 30 days of first admission to an acute care hospital with a diagnosis of stroke.

SOURCE(S)

Canadian Institute for Health Information (CIHI). Health indicators 2008: definitions, data sources and rationale. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008 May. 39 p.

Measure Domain

PRIMARY MEASURE DOMAIN

Outcome

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure is used to assess the risk-adjusted rate of all cause in-hospital death occurring within 30 days of first admission to an acute care hospital with a diagnosis of stroke.

RATIONALE

Stroke is a leading cause of death and long-term disability. Adjusted mortality rates following stroke may reflect, for example, the underlying effectiveness of treatment and quality of care. Inter-regional variations in the stroke mortality rates may be due to jurisdictional and institutional differences in standards of care, as well as other factors that are not included in the adjustment.

PRIMARY CLINICAL COMPONENT

Stroke; in-hospital mortality

DENOMINATOR DESCRIPTION

Total number of stroke episodes in an 11-month period

Refer to the "Technical Note: 30 Day Stroke In-hospital Mortality" document listed in the "Companion Documents" field, which describes the episode building and case selection.

NUMERATOR DESCRIPTION

Number of deaths from all causes occurring in-hospital within 30 days of admission for stroke

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Use of this measure to improve performance
Variation in quality for the performance measured

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Canadian Institute for Health Information (CIHI). Health indicators 2008. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008. 96 p.

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Federal health policymaking
Internal quality improvement
National reporting

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Regional

TARGET POPULATION AGE

Age 20 to 105 years

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

In Canada, outside Quebec, from 2004-2005 to 2006-2007 the risk adjusted rate of all cause in-hospital death occurring within 30 days of first admission to an acute care hospital with a diagnosis of stroke was 18.2%. The rate from 2003-2004 to 2005-2006 was 18.3%.

EVIDENCE FOR INCIDENCE/PREVALENCE

Canadian Institute for Health Information (CIHI). Health indicators 2008. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008. 96 p.

ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

BURDEN OF ILLNESS

Unspecified

UTILIZATION

Unspecified

COSTS

Unspecified

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Hospitalized stroke episodes in an 11-month period

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

Total number of stroke episodes in an 11-month period

Refer to the "Technical Note: 30 Day Stroke In-hospital Mortality" document listed in the "Companion Documents" field, which describes the episode building and case selection.

Exclusions

- Patients with a stroke hospitalization in preceding 365 days
- Patients who developed a stroke during hospital stay

RELATIONSHIP OF DENOMINATOR TO NUMERATOR

All cases in the denominator are equally eligible to appear in the numerator

DENOMINATOR (INDEX) EVENT

Clinical Condition
Institutionalization

DENOMINATOR TIME WINDOW

Time window brackets index event

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions

Number of deaths from all causes occurring in-hospital within 30 days of admission for stroke

Exclusions

Unspecified

MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

NUMERATOR TIME WINDOW

Fixed time period

DATA SOURCE

Administrative data

LEVEL OF DETERMINATION OF QUALITY

Not Individual Case

OUTCOME TYPE

Adverse Outcome

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a lower score

ALLOWANCE FOR PATIENT FACTORS

Risk adjustment devised specifically for this measure/condition

DESCRIPTION OF ALLOWANCE FOR PATIENT FACTORS

A logistic regression model is fitted with age, gender, type of stroke and select preadmission comorbid diagnoses as independent variables. Coefficients derived from the logistic model are used to calculate the probability of in-hospital death following stroke for each case (episode). The expected number of in-hospital deaths of a region is the sum of these case probabilities in that region. The risk-adjusted mortality rate (RAMR) is calculated by dividing the observed number of in-hospital deaths of each region by the expected number of in-hospital deaths of the region and multiplying by the Canadian average in-hospital death rate. A 95 percent confidence interval for the RAMR is also calculated and the method used to calculate confidence intervals is available upon request.

STANDARD OF COMPARISON

External comparison at a point in time
External comparison of time trends
Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

Unspecified

Identifying Information

ORIGINAL TITLE

30-Day stroke in-hospital mortality rate.

MEASURE COLLECTION

[Health Indicators 2008](#)

DEVELOPER

Canadian Institute for Health Information

FUNDING SOURCE(S)

Canadian Government

COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE

Employees: Canadian Institute for Health Information (CIHI) Health Indicators

FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST

None

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2006 Jun

REVISION DATE

2008 May

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

Canadian Institute for Health Information (CIHI). Health indicators 2008: definitions, data sources and rationale. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008 May. 39 p.

MEASURE AVAILABILITY

The individual measure, "30-Day Stroke In-Hospital Mortality Rate," is published in "Health Indicators 2008: Definitions, Data Sources and Rationale." This document is available in Portable Document Format (PDF) from the [Canadian Institute for Health Information \(CIHI\) Web site](http://www.cihi.ca/cihiweb/).

For more information, contact CIHI at, 4110 Yonge Street, Suite 300, Toronto, Ontario, Canada, M2P 2B7; Phone: 416-481-2002; Fax: 416-481-2950; E-mail: indicators@cihi.ca; Web site: <http://www.cihi.ca/cihiweb/>.

COMPANION DOCUMENTS

The following is available:

- Canadian Institute for Health Information (CIHI). Health indicators 2008. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008. 93 p.

This document is available in Portable Document Format (PDF) from the [Canadian Institute for Health Information \(CIHI\) Web site](#).

- Canadian Institute for Health Information (CIHI). ICD-9/CCP, ICD-9-CM and ICD-10-CA/CCI codes for health indicators 2008. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008. various p. This document is available from the [CIHI Web site](#).
- Canadian Institute for Health Information (CIHI). Technical note: 30 day stroke in-hospital mortality. [internet]. Ottawa (ON): Canadian Institute for Health Information (CIHI); [accessed 2008 Aug 15]. [1 p]. This document is available from the [CIHI Web site](#).

NQMC STATUS

This NQMC summary was completed by ECRI Institute on October 10, 2008. The information was verified by the measure developer on December 18, 2008.

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